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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/796,382

03/09/2004

Megan A. Fannon

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24267 7590 07/09/2008  
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EXAMINER

ECHELMMEYER, ALIX ELIZABETH

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                      |  |
|------------------------------|--|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/796,382         | <b>Applicant(s)</b><br>FANNON ET AL. |  |
|                              | <b>Examiner</b><br>Alix Elizabeth Echelmeyer | <b>Art Unit</b><br>1795              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,18 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,18 and 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office Action is in response to the amendment filed February 14, 2008. Claims 1, 6, 18, 21 and 22 have been amended. Claims 23 and 24 have been added. Claims 1, 2, 6, 18 and 21-24 are pending and are rejected finally for the reasons given below.

### ***Claim Interpretation***

2. Claims 1, 6, 18, 21, 22, 23 and 24 contain new limitations pertaining to how the cells were made before assembly. These limitations are interpreted to be product by process limitations. The product-by-process limitations are not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (see In re Thorpe, 227 USPQ 964, (CAFC 1985), In re Brown, 173 USPQ 685 (CCPA 1972), and In re Marosi, 218 USPQ 289, 292-293 (CAFC 1983)). MPEP 2113

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 18, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al (US 2002/0076597).

Regarding claims 1 and 21, Chang et al. teach a direct methanol fuel cell pack containing a plurality of cells. Each cell contains an anode, cathode and membrane, with current collectors corresponding to the two electrodes. Further, the array contains electrical connection members for connecting adjacent cells (abstract, Figure 9).

As for claims 6, 18 and 22, the cells are mechanically coupled by a first mechanical coupling component, or screw (18a), which is connected to a second mechanical coupling component, or plate (11) (see Figure 3, [0049]).

With further regard to claim 18, the cathode of one cell is connected to the anode of the next cell (Figures 9, 10). One of ordinary skill in the art would recognize that the cells of Chang et al. would have been connected using a method comprising providing a plurality of cells, connecting the cells electrically (as seen in Figure 9), and connecting the cells mechanically (See Figure 4).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.

The teachings of Chang et al. as discussed above are incorporated herein.

Chang et al. fail to teach adding additional cells to the array as seen in, for example, Figures 3-5.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide more fuel cells in an array such as the one of Figure 3 so as to provide either more voltage or more current, depending on the application and the manner in which the cells were connected (series or parallel). It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. MPEP 2144.04 (VIB)

7. Claims 2 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. as applied to claim 1 above, and in further view of Aronsson (US 2003/0054240).

The teachings of Chang et al. as discussed above are incorporated herein.

Chang et al. teaches an array of cells coupled to one another, but fails to teach that the coupling is by a plug and socket mechanism.

Aronsson teaches a multicellular battery, but the structure of Aronsson can also be used to attach fuel cells ([0003]).

Aronsson teaches connecting the cells with a plug and socket mechanism (see Figure 9).

Aronsson further teaches that such a connection is desirable since it does not require external connections and makes the cells easy to insert and remove ([0014], [0015]).

It would be desirable to connect the cells of Chang et al. in the plug and socket manner of Aronsson since the connection system of Aronsson does not require external connections and makes the cells easy to insert and remove.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the cells of Chang et al. in the plug and socket manner of Aronsson since the connection system of Aronsson does not require external connections and makes the cells easy to insert and remove.

As for claim 23, Chang et al. fail to teach testing each cell individually.

Aronsson teaches testing each cell individually ([0072]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to test the fuel cells of Chang et al. individually in order to determine whether the cells were functioning properly. To test the cells individually, the cells would have to be tested prior to connection to other cells, otherwise the cell would not be tested individually but instead would be tested with the other cells. Additionally, these are product by process limitations and are not given patentable weight, as discussed above.

### ***Response to Arguments***

8. Applicant's arguments filed February 14, 2008 have been fully considered but they are not persuasive.

Applicant argues that Chang et al. does not teach a plurality of direct oxidation fuel cells, each having a first and second electrical coupling in different locations, and that each fuel cell is manufactured separately and functions as a stand alone fuel cell.

It is clear in Figures 3-5 of Chang et al. that a plurality of fuel cells are taught. The fuel cells have electrical couplings on the top and bottom of each stack, these being the positive and negative current collectors. The limitations as to the manufacture of the cells are considered product by process limitations, as discussed above, but it can be seen in Figure 4 that the stacks could be made before the connections were made, and certainly before the mechanical connection of the screw was made. The cells of Chang et al. would function as "stand alone" fuel cells, since the cells have a membrane between a cathode and an anode, and collector plates on the top and bottom (abstract). The cells of the instant invention have all of these components. Since the instant disclosure does not teach that the cells need their own fuel, oxidant and possibly cooling inlets and outlets, the cells of Chang et al. function in the same manner as the cells of the instant invention.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is (571)272-1101. The examiner can normally be reached on Mon-Fri 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy N. Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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